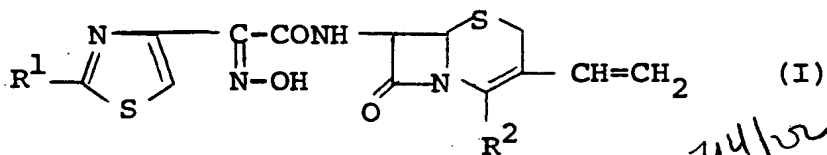


am
What we claim is :

- c
1. A syn isomer of ^{the} compound of the formula :



04007

10 *B* in which *R*¹ is amino or a protected amino group, and
*R*² is carboxy or a protected carboxy group,
B and a pharmaceutically acceptable salt thereof.

- 15 2. A compound of claim 1, wherein
*R*¹ is amino.

- 20 3. A compound of claim 2, which is
7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamido]-
3-vinyl-3-cephem-4-carboxylic acid (syn isomer) or
its sodium salt or its potassium salt.

- 25 4. A compound of claim 2, wherein
*R*² is esterified carboxy group.

- 30 5. A compound of claim 4, wherein
*R*² is lower alkoxycarbonyloxy(lower)alkoxycarbonyl.

- 35 6. A compound of claim 5, which is
1-ethoxycarbonyloxyethyl 7-[2-(2-aminothiazol-4-yl)-
2-hydroxyiminoacetamido]-3-vinyl-3-cephem-4-
carboxylate (syn isomer) or its hydrochloride.

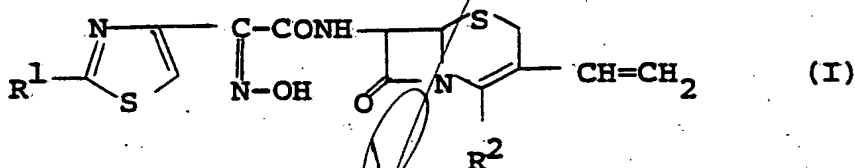
7. A compound of claim 4, wherein
*R*² is lower alkoxycarbonyl(lower)alkoxycarbonyl.

8. A compound of claim 7, which is
8 tert-butoxycarbonylmethyl 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamido]-3-
9 vinyl-3-cephem-4-carboxylate (syn isomer).
- 5 9. A compound of claim 4, wherein
R² is carboxy(lower)alkoxycarbonyl.
- 10 10. A compound of claim 9, which is
8 carboxymethyl 7-[2-(2-aminothiazol-4-yl)-
9 2-hydroxyiminoacetamido]-3-vinyl-3-cephem-4-
carboxylate (syn isomer).
- 15 11. A compound of claim 4, wherein
R² is lower alkanoyloxy(lower)alkoxycarbonyl.
- 20 12. A compound of claim 11, which is
8 1-propionyloxyethyl 7-[2-(2-aminothiazol-4-yl)-
9 2-hydroxyiminoacetamido]-3-vinyl-3-cephem-4-
carboxylate (syn isomer).
- 25 13. A compound of claim 11, which is
8 pivaloyloxymethyl 7-[2-(2-aminothiazol-4-yl)-2-
9 hydroxyiminoacetamido]-3-vinyl-3-cephem-4-
carboxylate (syn isomer).
- 30 14. A compound of claim 4, wherein
R² is higher alkanoyloxy(lower)alkoxycarbonyl.
- 35 15. A compound of claim 14, which is
8 palmitoyloxymethyl 7-[2-(2-aminothiazol-4-yl)-2-
9 hydroxyiminoacetamido]-3-vinyl-3-cephem-4-
carboxylate (syn isomer).
16. A compound of claim 4, wherein

R^2 is (5-lower alkyl-2-oxo-1,3-dioxol-4-yl) (lower)-alkoxycarbonyl.

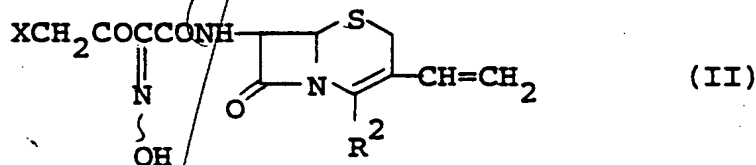
17. A compound of claim 16, which is
(5-methyl-2-oxo-1,3-dioxol-4-yl)methyl 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamido]-3-vinyl-3-cephem-4-carboxylate (syn isomer).
18. A compound of claim 4, wherein
 R^2 is phthalidyloxycarbonyl.
19. A compound of claim 18, which is
phthalid-3-yl 7-[2-(2-aminothiazol-4-yl)-2-hydroxyiminoacetamido]-3-vinyl-3-cephem-4-carboxylate (syn isomer).

20. A process for production of a syn isomer of compound of the formula:



in which R^1 is amino or a protected amino group,
and
 R^2 is carboxy or a protected carboxy group,
and a salt thereof,
which comprises

- (1) reacting a compound of the formula :

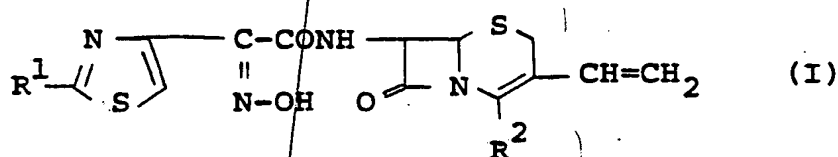


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in which R^2 is as defined above, and
 X is halogen,
 or a salt thereof with a compound of the
 formula :

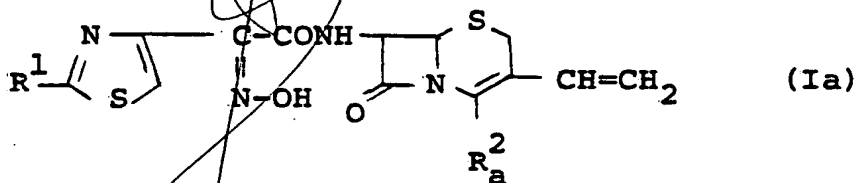


in which R^1 is as defined above,
 to give a compound of the formula :

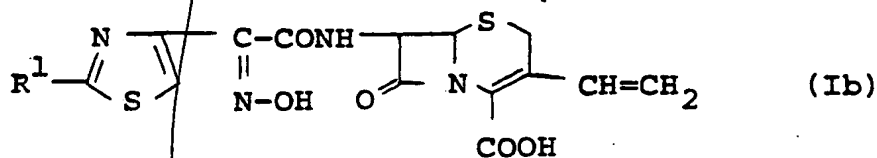


in which R^1 and R^2 are each as defined above,
 or a salt thereof; or

(2) subjecting a compound of the formula :

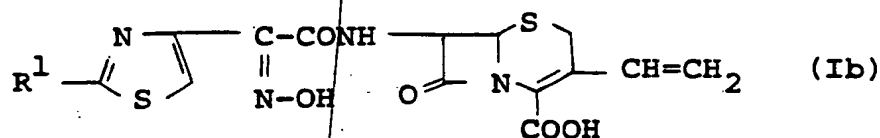


in which R^1 is as defined above, and
 R_a^2 is a protected carboxy group,
 or a salt thereof to the removal reaction of the
 carboxy-protective group to give a compound of the
 formula :

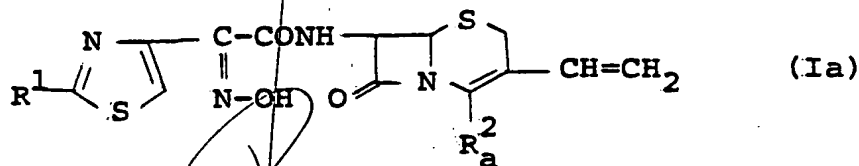


in which R^1 is as defined above,
or a salt thereof; or

- (3) introducing a carboxy-protective group
into a compound of the formula :

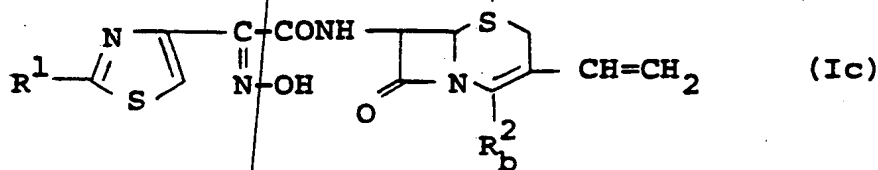


in which R^1 is as defined above,
or a reactive derivative at the carboxy group
thereof, or a salt thereof
to give a compound of the formula :



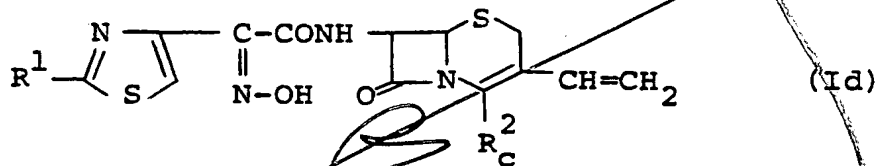
in which R^1 and R_a^2 are each as defined above,
or a salt thereof; or

- (4) subjecting a compound of the formula :



in which R^1 is as defined above, and
 R_b^2 is protected carboxy(lower)-
alkoxycarbonyl,

or a salt thereof to removal reaction of the
carboxy-protective group in R_b^2 to give a compound
of the formula :



in which R^1 is as defined above, and
 R^2 is carboxy(lower)alkoxycarbonyl,
 or a salt thereof.

10

a ²⁰
a ²¹

antimicrobial
 21. A pharmaceutical composition which comprises *as an antimicrobially* ~~as an~~ *effective amount of* ~~active ingredient~~ a compound of claim 1 and a pharmaceutically acceptable salt thereof in admixture with pharmaceutically acceptable carriers.

15

End
 22. A method for the treatment of infectious diseases caused by pathogenic microorganisms which comprises administering a compound of claim 1 and a pharmaceutically acceptable salt thereof to infected human being or animals.

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23. Use of a compound of claim 1 and pharmaceutically acceptable salt thereof for treatment of microbial infections.

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30

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Add B1